PROJECT DESCRIPTION

I. GENERAL

This project involves the installation of a new traffic control signal at the intersection of US 1 and Patuxent Range Rd./Chase Quarry Entrance in Howard County, Maryland. US 1 is considered to run in a north/south direction.

II. INTERSECTION OPERATION

The intersection is to operate in a NEMA six (6) phase, full-traffic-actuated mode. There will be an exclusive/permissive left turn phase for both north and southbound movements of US 1. The US 1 through movements will operate concurrently. The Patuxent Range Road/Chase Quarry Entrance through movements will operate in a side street split phase mode.

An eight phase, full-traffic-actuated, solid state digital controller with intersection monitor and harness, battery back-up, one four-channel rack mounted time delay output loop detector amplifier, and video detection housed in a base mounted cabinet are to be installed at this location.

CONTACT LIST

The contact persons for District #7 are as follows:

Mr. John Concannon
Assistant District Engineer - Traffic
301-624-8140

Mr. Jim Buckalew
Assistant District Engineer - Utility
301-624-8115

Mr. Dave Coyne
Assistant District Engineer - Maintenance
301-624-8105

Mr. Richard L. Daff
Chief, Traffic Operations Division
410-787-7630

The Power Company Representative is:
Baltimore Gas and Electric Company
Mr. Keith Mayle
7317 Parkway Drive South
Hanover, Maryland 21076
410-859-9070

EQUIPMENT LIST

A. Equipment to be supplied by MD-SHA.

NONE

B1. Approved S.H.A. equipment to be purchased by the Developer and installed by the Contractor. All equipment in this list shall have catalog cuts submitted for approval prior to installation.

Quantity	Units	Specification Section	Description
1	EA	818	27 ft. steel mast arm pole with a 38 ft. mast arm.
1	EA	818	27 ft. steel mast arm pole with a 60 ft. mast arm.
2	EA	818	27 ft. steel mast arm pole with a 70 ft. mast arm.
1	EA	816	Standard S.H.A. traffic signal controller, base mounted cabinet, one four-channel loop detector amplifier, and video detection (Note: Controller and cabinet shall be purchased from Econolite and delivered to the S.H.A. signal shop for wiring and testing. Contact Mr. Ed Rodenhizer (410) 787-7650).
4	EA	---	Video Detection Camera Equipment (to include detector cables) (1- 350 LF, 1- 250 LF, 1- 200 LF, 1- 100 LF).
4	EA	814	12 in., one-way, three section (R,Y,G) adjustable black faced traffic signal head with mast arm mounting hardware and tunnel visors.
2	EA	814	12 in., one-way, five section (R,Y,YA,G,GA) adjustable black faced traffic signal head with mast arm mounting hardware and tunnel visors.
2	EA	814	12 in./8 in., one-way, five section (12 in. YA, GA/ 8 in. R,Y,G) adjustable black faced traffic signal head with mast arm mounting hardware and tunnel visors.
2	EA	814	12 in., one-way, four section (R,Y,G,GA) adjustable black faced traffic signal head with mast arm mounting hardware and tunnel visors.
2	EA	814	12 in./8 in., one-way, four section (12 in. GA/ 8 in. R,Y,G) adjustable black faced traffic signal head with mast arm mounting hardware and tunnel visors.
2	EA	813	16 in. x Var. in. D-3(1) (Dual-faced) sign with mast arm mounting hardware.
2	EA	813	24 in. x 96 in. M95-1 sign with mast arm mounting hardware.
2	EA	813	36 in. x 42 in. R 10-12 sign with mast arm mounting hardware.
1	EA	813	30 in. x 36 in. R 3-5(L) sign with mast arm mounting hardware.
1	EA	813	30 in. x 36 in. R 3-5(R) sign with mast arm mounting hardware.
1	EA	813	30 in. x 36 in. R 3-6(L) sign with mast arm mounting hardware.
1	EA	813	30 in. x 36 in. R 3-6(R) sign with mast arm mounting hardware.
2	EA	---	Micro-loop probe (set of 3) with 500 ft. lead-in cable.
2	EA	---	Micro-loop probe (set of 3) with 750 ft. lead-in cable.
2	EA	806	15 ft. luminaire arm.
2	EA	806	250 W H.P.S. lamp and luminaire with photocell.

B2. Equipment to be furnished and/or installed by the Contractor.
All equipment in this list shall have catalog cuts submitted for approval prior to installation.

Quantity	Units	Specification Section	Description
Lump Sum	LS	108	Mobilization.
Lump Sum	LS	104	Maintenance of traffic.
5	CY	205	Test pit excavation.
4	EA	811	Handhole.
75	LF	815	Sawcut for signal loop detector.
400	LF	810	2-conductor electrical tray cable (No. 12 A.W.G.).
120	LF	810	5-conductor electrical cable (No. 14 A.W.G.).
1800	LF	810	7-conductor electrical cable (No. 14 A.W.G.).
25	LF	810	3-wire (No. 4 A.W.G.) electrical cable.
450	LF	804	Bare copper stranded ground wire (No. 6 A.W.G.).
15	LF	805	1 in. liquid tight flexible non-metallic conduit for loop detector sleeve.
200	LF	805	2 in. polyvinyl chloride (Schedule 80) electrical conduit - trenched.
25	LF	805	3 in. polyvinyl chloride (Schedule 80) electrical conduit - trenched.
30	LF	805	4 in. polyvinyl chloride (Schedule 80) electrical conduit - trenched.
400	LF	805	4 in. polyvinyl chloride (Schedule 80) electrical conduit - bored.
17.85	CY	801	Concrete foundation for traffic signal equipment.
5	EA	804	Ground rod - ¾ in. diameter x 10 ft. length.
1	EA	807	Control and distribution equipment (120/240 V, one phase, three wire system) for a type B-6 underground electrical service.
100	LF	556	24 in. wide HAPPTPM - white for stop line.
1	EA	---	Cut, clean, and cap steel mast arm pole.
Lump Sum	LS	---	Remove and Salvage existing Traffic Signal Equipment.
Lump Sum	LS	---	As-built for S.H.A. (on MicroStation).

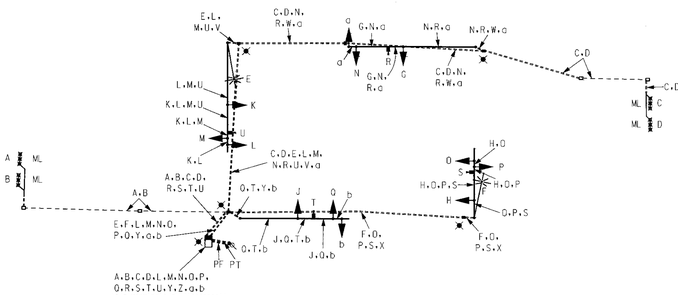
C. SHA forces shall remove the controller and all auxiliary equipment from the controller cabinet. The cabinet and all other materials to be removed by the contractor shall become the property of the contractor.

Quantity	Units	Description
1	EA	Pole mounted cabinet and controller.
5	EA	12 in. 3-section traffic signal head.
1	EA	15 in. 5-section traffic signal head.
1	EA	R 3-5(R) sign.
1	EA	R 10-12 sign.
3	EA	Steel strain pole.

Phase Chart

	1	2	3	4	5	6	7	8	9	10	11	12	
Phase 1 & 5	R ◄G—	R ◄G—	R	R ◄G—	R ◄G—	R	R	R	R	R	R	R	
1 & 5 Change to Phase 1 & 6 or Phase 2 & 5 or Phase 2 & 6													
Phase 1 & 6	G ◄G—	G ◄G—	G	R	R	R	R	R	R	R	R	R	
1 Change	G ◄Y—	G ◄Y—	G	R	R	R	R	R	R	R	R	R	
Phase 2 & 5	R	R	R	G ◄G—	G ◄G—	G	R	R	R	R	R	R	
5 Change	R	R	R	G ◄Y—	G ◄Y—	G	R	R	R	R	R	R	
Phase 2 & 6	G	G	G	G	G	G	R	R	R	R	R	R	
2 & 6 Change	Y	Y	Y	Y	Y	Y	R	R	R	R	R	R	
Phase 3	R	R	R	R	R	R	G ◄G—	G ◄G—	G	R	R	R	
3 Change	R	R	R	R	R	R	Y	Y	Y	R	R	R	
Phase 4	R	R	R	R	R	R	R	R	R	G ◄G—	G ◄G—	G	
4 Change	R	R	R	R	R	R	R	R	R	Y	Y	Y	
Flashing Operation	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/R	FL/R	FL/R	FL/R	FL/R	FL/R	

Wiring Diagram



A, B, C, D } Micro-loop Detector Lead-in Cable

E, F } 2-Conductor Tray Cable (No. 12 A.W.G.)

G, H, J, K } 5-Conductor Electrical Cable (No. 14 A.W.G.)

L, P, M, Q, N, a, O, b } 7-Conductor Electrical Cable (No. 14 A.W.G.)

R, S, T, U } Video Detector Cable (as per manufacturer)

V, W, X, Y } Bare Copper Ground Wire (No. 6 A.W.G.)

Z — 3-Wire (No. 4 A.W.G.) for Traffic Signal Electrical Service

PF — Proposed Underground Electrical Service By BGE

PT — Proposed Underground Telephone Service By Verizon

— Proposed Grounding Rod

ML — Micro-loop Detector

Revision "H"

The Traffic Group, Inc.
410-931-6600
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MARYLAND DOT - STATE HIGHWAY ADMINISTRATION
Office of Traffic & Safety
TRAFFIC ENGINEERING DESIGN DIVISION
(General Information Plan)
US 1 at Patuxent Range Rd.

DRAWN BY: rmd	F.A.P. NO. N/A		TS NO. 22-H	SHEET NO. 2 OF 2
CHECKED BY:	S.H.A. NO. BW996M82			
SCALE: N/A	COUNTY: Howard		T.I.M.S. NO. F242	
DATE: March 6, 2003	LOG MILE: 13000103.84			

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